STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-publication of Notice Statement)

Add Section 126; Amend Section 180.2
Title 14, California Code of Regulations
Re: Commercial Tanner Crab Fishery Provisions

I. Date of Initial Statement of Reasons: September 16, 2005

II. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing: Date: February 4, 2005
Location: San Diego, CA

(b) Discussion/Adoption Hearing: Date: December 9, 2005
Location: Concord, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

Emerging Fishery Statute and Commission's Emerging Fisheries Policy

The Commission's Policy on Emerging Fisheries specifies that the Director of the Department of Fish and Game (Department or CDFG) shall make a determination as to whether a fishery is "emerging" by considering whether there have been increases in landings, experimental fishery permit applications, an increase in the efficiency of the gear used, or if there is evidence that the existing regulations are not sufficient to insure a stable, sustainable fishery.

At the Commission's February 4, 2005 meeting in San Diego, CA, the Department stated that due to the success of the experimental Tanner crab (*Chionoecetes tanneri*) fishery in 2003 and 2004, it had determined that the fishery satisfies the requirements of Fish and Game Code 7090 as an emerging fishery. The target of major Alaska fisheries, Tanner crabs consist of several species of crab of the genus *Chionoecetes*, including the species commonly known as "snow crab," and are highly valued for human consumption.

The emerging fishery statute provides that "the Commission, upon the advice and recommendations of the Department, shall encourage, manage, and

regulate emerging fisheries consistent with the policies of [the Marine Life Management Act (Fish and Game Code Section 7050 et seq.)].” The statute further specifies that the Commission may adopt regulations that limit take by means that may include, but are not limited to, restricting landings, time, area, gear, or access.

The regulations in this proposal seek to provide for the sustainable development of a small to moderate-scale commercial Tanner crab trap fishery in deep water off the coast of California that would be adopted under the authority granted to the Commission to manage and regulate emerging fisheries. The proposal includes a seasonal harvest limit, a permit requirement, individual landing limits, a cap on the number of traps and strings of traps, a logbook requirement, a minimum size limit, trap construction requirements, a prohibition on the take of female crab, a minimum fishing depth, and a requirement that every permitted vessel carry an observer to collect biological and fishery data for the first 60 days once fishing has commenced each season.

Experimental Gear Permit Request

Fish and Game Code Section 9000 prohibits commercial harvest of any finfish, mollusk or crustacean using trap gear unless expressly authorized by statute. Other statutes in Article 1 of Chapter 4 of the Fish and Game Code specify trap gear requirements for each directed commercial fishery in the state. Section 9011, which defines crab trap requirements, only provides specifications for traps that are used for purposes of taking Dungeness and rock crabs. No mention is made regarding traps that might be used for purposes of taking other species of crab. As a result, crab traps that are constructed differently than Dungeness or rock crab traps may not be used for purposes of commercial harvest of other species of crabs.

In 2000, three requests were made to the Fish and Game Commission for an experimental gear permit to explore the feasibility of commercial harvest of Tanner crab using traps in the offshore waters of California, following some initial prospecting by a vessel working with a Department biologist in the Eureka-Crescent City area. The applicants sought exemption from the statutory requirements on crab trap gear construction, and requested to use bigger traps than those authorized for the state’s Dungeness and rock crab fisheries.

The Commission may grant experimental gear permits upon request in such circumstances under authority of Fish and Game Code Section 8606, which provides that “the Commission shall encourage the development of new types of commercial fishing gear and new methods of using existing commercial fishing gear” by approving experimental gear permits subject to conditions that the

Commission prescribes. Experimental gear permits, which are only one year in term, may not be authorized for more than four consecutive years.

The three requests received by the Commission were all from individuals based in other states. The Commission approved the permits, which were issued by the Department in October of 2000, but none of the applicants activated the permit. One of the three individuals later requested renewal of the permit, which the Commission granted. However, the applicant again did not activate the permit, explaining that there was difficulty in securing a buyer to purchase landings from the experimental fishery.

In 2003, the applicant renewed and this time activated the permit, and successfully fished Tanner crab off northern California. In 2004, the permit was renewed for the fourth time, and a second experimental gear permit was issued to another individual as well. At the time the Commission agreed to issue this second permit, the Department recommended to the Commission that any additional permit requests for deep water or Tanner crab trap fishing should be denied, pending the results from the experimental fishery. The Commission agreed with this recommendation, and subsequently denied three additional requests for experimental permits.

The Experimental Fishery

The conditions of the experimental gear permit imposed by the Commission for the experimental fishery included the use of a 'dome' type of trap, no more than 100 traps per string, a total limit of 1,000 traps, a 300-fathom minimum fishing depth, retention of males only, and a legal minimum size limit of five inches. In addition, the permittee was required to hire and pay for an observer, acceptable to the Department, for at least 25 percent of his fishing time. Most of these permit conditions were adapted from Alaska Department of Fish and Game's (ADFG) commercial Tanner crab fishing regulations.

The experimental fishery landed 212,112 pounds of live Tanner crab in 2003 and 460,964 pounds in 2004, from the area around Cape Mendocino. The fishery operated primarily along the 500-fathom depth contour, and between 8 and 35 miles from shore. In 2004, the fishing area extended further south than in 2003, spanning approximately 180 miles from Trinidad to Point Arena (see Figure 1).

Tanner crabs taken in the experimental fishery were offloaded in Crescent City, Eureka, and Fields Landing, and were processed nearby and shipped out of state. In 2003, the fishing activity took place from April through June, while in 2004, fishing activity began in January and continued through July.

On-board observer data collected from the experimental fishery, as well as information provided in the operator's trap logbooks, formed the basis for analysis and development of the proposed management strategies contained in this regulatory package.

Implications of the Experimental Fishery

The Department expects that the success of the experimental fishery will continue to generate interest. Since 2003, Department biologists have fielded telephone inquiries from several other interested trap fishermen who were advised that no additional experimental permits would be considered by the Commission until sufficient data had been collected to determine the sustainability of the fishery. Additionally, the deep water crab fishing community from the Pacific Northwest is now aware that there are commercial quantities of Tanner crab in California, and that it may be economically viable to bring a vessel that is already equipped for fishing deep water crab down to California. The king and Tanner crab fisheries in Alaska currently have excess fishing capacity, prompting vessel owners to seek opportunities elsewhere. Interest may also come from those looking for fisheries that operate at times when crab seasons are closed in Alaska.

The vessel that participated in the experimental fishery exceeded 80 feet in length and 50 tons. The Department believes that in addition to crab vessels based elsewhere, larger California vessels such as those that currently operate in the drift gillnet and albacore fisheries may have an interest in participating in the Tanner crab fishery, as well as some of the larger Dungeness crab vessels that already use trap gear in northern California waters. However, investments in gear and vessel retrofitting would still be needed by most California vessels to operate traps in waters of this depth. So long as there are sustainable marketing opportunities for Tanner crab, the Department believes there may be interest in the developing fishery by vessels based in California and in other west coast ports.

Biological Information

The genus *Chionoecetes* is comprised of five species of Tanner crab, *C. opilio* (snow crab), *C. japonicus*, *C. bairdi, C. angulatus*, and *C. tanneri* (grooved Tanner crab or *tanneri*). *Tanneri* and *angulatus* are the only species of these large spidery deep water crabs found as far south as California waters. The former ranges from near the Pribilof Islands in Alaska to the California-Mexico border in depths from about 250 fathoms to 1050 fathoms (though most are found deeper than 300 fathoms in California), and prefers soft bottom habitats. *Opilio* and *bairdi* are the targets of major fisheries in Alaska and other parts of the

northern latitudes, while *tanneri* and *angulatus* have been fished on a limited basis in Alaska.

The minimum carapace width size at maturity for *tanneri* is 4.6 inches for males and 3.5 inches for females; age at maturity is believed to be 5 or 6 years. Though unknown for *tanneri*, the life span for other Tanner species has been estimated at 15-19 years. Tanner juveniles are an important prey item for Dover sole, thornyheads and sablefish. Spawning occurs from January to May, with females able to fertilize their eggs with stored sperm from previous matings. Tanner crabs are known to form dense breeding aggregations in early spring. As members of the family Majidae, Tanner crabs are cousins to our sheep crab (*Loxorhynchus grandis*), the target of a small fishery in southern California.

Overview of Other Tanner Crab Fisheries

Worldwide there are numerous Tanner crab fisheries, centered in the north Pacific off of Alaska and Russia, and in the north Atlantic off Greenland and Canada. However, there are no major fisheries for the *tanneri* species of Tanner crab anywhere. As described below, the Alaskan *tanneri* fishery is negligible relative to the other Tanner crab fisheries in the state, and is only authorized by special permit issued by ADFG's Office of the Commissioner. In fact, all of the west coast *tanneri* fisheries operate only on an experimental basis under special permits and conditions, with very low participation levels.

The Department examined these *tanneri* fisheries, along with the other Northern Pacific Tanner crab trap fisheries for *bairdi* and *opilio* with the objective of determining the best approach for management of California's Tanner crab fishery. Since the experimental fishery began, Department staff have been gathering reference information, insight and perspective from other agencies in developing the proposal for California's fishery. In compiling this summary, as well as the attached reference table (Table 1) comparing the various Tanner crab management strategies, the Department relied largely on information posted on the ADFG website, as well as personal communication with the agency's biologists and managers. Information was also attained from Canada's Department of Fisheries and Oceans (DFO), Washington Department of Fish and Game (WDFW), and Oregon Department of Fish and Wildlife (ODFW).

Alaska Opilio

The Alaska Tanner crab fishery for *opilio,* commonly known as snow crab, is by far the largest Tanner crab fishery in the United States. The fishery operates in Western Alaska, exclusively in the Bering Sea. Record-high landings occurred in 1991, when 332 million pounds were taken. High-volume landings of *opilio* continued through the late 1990s, averaging 185 million pounds in 1997-1999, and worth $138 million per year at that time.

However, since 2000, landings and ex-vessel revenues have plummeted, averaging less than 30 million pounds per year and worth about $50 million annually. The decline in catch follows from reduced harvest guidelines that are set based on estimates of mature male biomass, which are generated each year from annual trawl surveys conducted at study sites within the fishing area. The biomass must be above a minimum threshold size in order for a fishery to be authorized for the following year. The harvest strategy specifies exploitation rates of 10 percent to 22.5 percent of the mature male biomass, depending on its estimated size. Once determined, that allowable harvest may be reduced so that not more than a certain percent of the total biomass of legal males may be taken. The allowable harvest level also determines the trap limit; a low harvest guideline results in fewer traps allowed per vessel.

Through the 2005 season, the *opilio* fishery has operated "derby style," commencing January 15th of each year. Following the opener, catches are tracked against the harvest guideline as fishing occurs, and then closure of the fishery is announced for a specified time and date based on ADFG's projection of when the total catch will be taken. In recent years, the fishing season has lasted about four days to one week, and between 180 and 250 vessels have participated in the fishery each season. These vessels range in size from 60 feet up to 180 feet in length, and may hold up to 400,000 pounds of crab. Traps are usually baited with chopped herring and soak from 1 to 3 days.

The final catch statistics in recent years have been close to ADFG's established harvest guideline levels, exceeding them by no more than 15 percent each year. Therefore, despite downsides to a fishery that operates in this manner, it has proven successful at achieving the desired harvest level.

The *opilio* fishery also has established minimum size limits, licensing requirements, gear regulations (trap limits, mesh size, escape mechanisms and regulations specific to the size of the vessel), observer requirements, closed areas (to avoid bycatch) and closed seasons (to avoid molting, mating and soft-shell periods), and a prohibition on landing female crabs. See attached Table 1.

ADFG indicates that beginning in 2006, the *opilio* fishery will operate much differently than it has in the past. An individual fishery quota (IFQ) share program is in the process of being implemented by the National Marine Fisheries Service (NMFS) for the Bering Sea crab fisheries, where each vessel will be authorized to land only a specific amount, and fishing activity may occur over a longer time period, rather than having a "race for the fish" over such a short amount of time each year. However, because these shares may be sold to others, implementation of IFQs could result in some vessels leaving the Alaska *opilio* fishery to pursue other fishing opportunities elsewhere. CDFG anticipates

that as a result of the Alaska IFQ program, some of these vessels may seek future opportunity in the California *tanneri* fishery.

Alaska Bairdi

The *bairdi* Tanner crab fishery is much smaller than the fishery for *opilio,* and has historically occurred both in the Bering Sea and Gulf of Alaska. ADFG staff assesses, manages and regulates about seven different *bairdi* fisheries separately throughout the state, using specific harvest guidelines that are derived from annual trawl surveys in each region. Like *opilio*, the *bairdi* fisheries operate derby style. However, because of differences in the number of vessels participating and varying harvest levels in each area, some *bairdi* fisheries span a substantially longer time period each season, and some have lasted a month or more.

In 1978, before ADFG limited *bairdi* catches with harvest guidelines, record domestic harvests for *bairdi* amounted to over 123 million pounds. However, the take of *bairdi* has been minimal in recent years; and between 2000 and 2004, statewide *bairdi* landings averaged only 1.6 million pounds, with an ex-vessel value of $3.4 million annually.

In 2005, additional areas were open for *bairdi* fishing in the Gulf of Alaska that previously had been closed due to low abundance levels, and a few areas saw increased allowable harvest levels from recent years. Based on preliminary information, the 2005 ex-vessel value for *bairdi* is projected to reach 5.7 million dollars.

Alaska Tanneri

The Alaskan *tanneri* fishery is minor compared to the *opilio* and *bairdi* fisheries, and when there is a fishery at all, it is generally located in the Bering Sea or Aleutian Islands. The fishery is intermittent and only allowed by a special permit issued by ADFG's Commissioner. Since 1992, only 1 to 8 vessels have participated each year, although since 1997, the number of vessels has been two or fewer. The fishing results were discouraging, with low catch and poor meat recovery. Highest catches on record were in 1995, when about 2 million pounds were landed statewide, primarily in the Bering Sea and Eastern Aleutian Islands. This catch earned $1.40 per pound, with an average weight of 1.6 pounds per crab.

When fishing for *tanneri* is done by only a few vessels, as is usually the case, ADFG does not release landings information on the fishery in terms of the number of participating vessels, number of pounds landed, or the price paid for the catch. Therefore, recent catch and value information is not available.

Vessels participating in Alaska's *tanneri* fisheries are regulated pursuant to the Alaska Administrative Code (AAC), but also by special permit conditions that are specific to each fishery management area. The AAC regulations specify that vessels fishing for *tanneri* may not use more than a certain number of traps per vessel, and must fish in waters 200 fathoms or deeper. The number of large traps authorized ranges from 75 in some areas to 150 in others, and there is one area with no trap limits.

Pursuant to the AAC regulations, the Commissioner has authority to establish any other condition for these special permits as warranted, but also specifically identifies that the Commissioner may impose a harvest limit, fishing seasons, area restrictions, size limits, observer requirements, trap construction requirements, logbook requirements, or change the minimum depth limit. When these permits are issued, depending on the district, allowable harvest levels range from 50,000 to 200,000 pounds per district. Unlike other Tanner species, these levels are based only on average prior catch levels in those areas, as no stock assessment information is available.

British Columbia Tanneri

The DFO in British Columbia in 1997 began to investigate its *tanneri* resource as one of several new fishery resources being proposed for development. In 2000, the agency calculated biomass estimates for *tanneri* off the west coast of Vancouver Island using area swept trawl surveys and trap surveys. They estimated 1.4 million pounds of harvestable biomass (males with a carapace width over 4.4 inches). Based on the estimate, DFO planned to allow experimental harvest, but so far they have not been able to interest enough fishermen to participate in an experimental fishery.

Washington Tanner Crab

Washington previously authorized a small-scale experimental Tanner crab fishery in 1998, but only minimal quantities were landed. When a subsequent request came for an experimental fishery in 2004, WDFW denied the request for two reasons. First, the fishery would take place in deep waters where there is a foreseeable risk that the fishery might incidentally take one or more overfished species of federally-managed groundfish in their trap gear. Second, staffing and cost constraints that come with emerging fisheries made it necessary for WDFW to minimize the number of emerging fisheries that it would undertake to develop, and the spot prawn and sardine fisheries were given priority.

Oregon Tanneri

ODFW has maintained a Developing Fisheries permit program for Tanner crab since 1995, issuing between 2 and 10 permits annually, at a cost of $75 each. However, there has only been one fishery participant since 2001. While the permittees do not operate under any harvest limit, they are greatly restricted in

the amount of gear they are authorized to use, based on interactions with the groundfish trawl fishery in past years. Each vessel is limited to the use of strings of traps that do not weigh in excess of 2500 pounds, and each trap that is used must not individually weigh more than 300 pounds. It is thought that by minimizing the weight of trap gear, damage to trawl nets may be reduced if interaction occurs, and less trap gear would be lost.

In developing the proposed regulations, California has been working closely with ODFW staff to ensure that since the Tanner crab resource appears to be abundant in waters near the California-Oregon border, the management strategies of the two states are consistent in achieving needed resource and environmental protections for the Tanner crab fishery, other fisheries, and the offshore slope waters.

Canadian Opilio

Canada's Tanner crab fisheries are exclusive to its Atlantic waters (other than the experimental *tanneri* fishery) and are managed with limited entry, total allowable catch limits, individual fisherman quotas, sex and size limits, area closures, gear restrictions and seasons. Landings in 1995 totaled 48.5 million pounds.

Estimate of California Tanner Crab Biomass

NMFS' Northwest Fisheries Science Center conducts annual groundfish trawl surveys along the west coast. They develop estimates of biomass for various species of fish and invertebrates from these deep water slope surveys. Relative to other deep water fish and invertebrate resources in the NMFS survey, *tanneri* ranks among the most abundant.

For the six-year period from 1998 through 2003, estimates of *tanneri* biomass were obtained from NMFS for waters off California between 100 and 700 fathoms in depth. Based on earlier surveys, there are few *tanneri* at shallower or deeper depths. The estimated total *tanneri* biomass off the California coast during this time period ranged from 26.7 million pounds to 60.5 million pounds, averaging 40 million pounds. The Department used this six-year average estimate of biomass to develop a recommendation for a seasonal harvest limit for the proposed fishery.

Existing Fishery Impacts on the California Tanner Crab Resource

While the California Tanner crab fishery resource was not commercially harvested until the development of the experimental fishery, Tanner crab have been taken for decades in deep water trawl fisheries that target groundfish and flatfish in relatively large quantity. In fact, in some years in the 1980s, Tanner crab bycatch was estimated to exceed nearly five million pounds. More recently,

with substantial cutbacks in the allowable harvest levels and/or authorized fishing areas for these deep water trawl fisheries, estimated take of Tanner crab from this source has substantially decreased.

Bycatch estimates are generated from at-sea observations by federal groundfish fishery observers. Tanner crab taken as bycatch in these fisheries is discarded and not landed, because when crabs are taken in trawl nets they are crushed in the process, making the product unmarketable. Federal groundfish observer data available for 2001 through 2003 indicate that the ratio of Tanner crab observed to the landed catches of Dover sole, thornyheads and sablefish taken from the same trawls was 9.2 percent by weight. Applying this ratio to total California commercial landings of Dover sole, thornyheads and sablefish taken with trawl gear between 1998 and 2003 produced an annual *tanneri* bycatch estimate ranging from 1.1 million pounds to 2.2 million pounds, averaging 1.5 million pounds.

Fishing Mortality of Undersized and Female Crabs

Virtually all Tanner crab fisheries are managed as male-only, with a minimum size limit, to protect the spawning stock and because males grow to be larger than females. One concern for the California *tanneri* trap fishery is the extent of discard and handling mortality of sublegal males and females. Discard mortality is exacerbated by the deep depths Tanner crab are hauled from, and the trapping of air under the carapace that occurs during this process. Some females and sublegal males returned to sea end up as 'floaters'.

Additionally, Tanner crabs are not as robust as king or Cancer crabs and are subject to greater handling mortality than those hardier species. Studies of *opilio* discard mortality (sublegals and females) show that it can range from 4 percent to 20 percent. Other studies indicate that the number of retained crabs that die prior to landing (known as 'deadloss') may be a good estimator of survival of the released female and undersized crab. In the 2003 California experimental fishery, the rate of deadloss was 10.1 percent, and 6.1 percent in 2004.

Legal males retained in 2003 comprised 50.6 percent by number of captured Tanners, compared to 31.0 percent in 2004, meaning about 50 percent of the catch by number was released in 2003, and 69 percent was released in 2004. Females comprised 26.2 percent and 12.3 percent by number, in 2003 and 2004 respectively, with the balance being undersized males.

The Proposed California Tanner Crab Trap Fishery Program- T14 Section 126

Existing trap statutes of the Fish and Game Code do not define a type of trap that may be used for the commercial harvest of Tanner crab. Under authority of the emerging fisheries statute, defined in Fish and Game Code Section 7090, the proposal would provide for a directed fishery for Tanner crab with specified trap gear under regulations established by the Commission. If adopted, Section 126, Title 14, CCR, would establish a Tanner Crab Trap Vessel Permit allowing for the commercial harvest of Tanner crab using trap gear.

While the commercial harvest of Tanner crab using gear other than traps is and always has been authorized, landings have been virtually non-existent. However, the proposed regulations in this package would also implement new requirements upon those fishing with other gear types who take Tanner crab incidentally.

Subsection (a) of proposed Section 126, Title 14, CCR, specifies the permit requirement for take of Tanner crab with trap gear and defines all permit conditions that apply to the directed commercial trap fishery. Subsections (b) through (f) apply to all commercial take of Tanner crab, regardless of gear type.

Subsection (a) - Permit Required for Take Using Trap Gear. The proposed regulations will require any vessel using traps to take, possess aboard a vessel, or land Tanner crab (*Chionocetes* spp.) for commercial purposes to hold a Tanner Crab Trap Vessel Permit. If adopted, regulations of this subsection defining the new permit requirement will also affect fishermen that do not hold a Tanner Crab Trap Vessel Permit in different ways depending on the gear they presently use, described as follows:

Existing Trappers - At this time, under existing statutes and regulations that implement other commercial trap fishery permit programs, incidental landings of Tanner crab may be made. The proposed regulations of Section 126, Title 14, CCR, would no longer allow these landings. Any Tanner crab taken incidentally in other trap fisheries may not be landed, and must be immediately released unless the vessel is issued a Tanner Crab Trap Vessel Permit. These fishermen would be allowed to purchase a permit for their vessel if they wish to continue to retain the opportunity to land Tanner crab using trap gear.

The purpose of the Tanner Crab Trap Vessel Permit requirement is so that fishermen that wish to be participants in California's Tanner crab trap fishery can be identified and regulated by conditions of the permit itself. Allowing other trappers to continue to land Tanner crab without a permit would mean that many of the proposed regulations would not apply to them, such as the at-sea observer

requirement. Additionally, should market demand or value for Tanner crab increase significantly, participants in existing trap fisheries might have incentive to begin targeting Tanner crab with their existing trap gear that is specifically authorized for another fishery.

Existing Users of Gear Other Than Traps – The proposed regulations of this subsection would clarify that vessels or individuals may continue to take and possess Tanner crab as incidental catch with other gear types. The Department is aware that existing commercial bottom trawl fisheries often take and discard Tanner crab incidentally in groundfish fisheries. The proposed regulations would allow those operations to continue with their present practices and not be impacted by the new requirements that are primarily directed at the emerging trap fishery.

While landings of Tanner crab with other gear types have been virtually non-existent in the past, should these fishermen make an incidental landing of Tanner crab at some point in the future, they would be subject to new requirements of subsections (b) through (f) of proposed Section 126, Title 14, CCR. Specifically, if the proposed regulations are adopted, their Tanner crab landings would have to adhere to the minimum size limit, and they would be prohibited from landing female Tanner crab.

The proposed regulations of this subsection also specify that the Tanner Crab Trap Vessel Permit will authorize take of all "Tanner crab," which includes all species of the genus *Chionocetes*. While the experimental fishery focused on the harvest of *tanneri,* there was a small incidental take of *angulatus,* which amounted to less than 1 percent of the *tanneri* take. The Department believes that regulating the take of all Tanner crabs as a group under authority of the permit will most effectively serve to manage and allow for development of a single offshore deep water crab fishery.

While many of the Department's newer commercial fishery permit programs utilize individual permits rather than vessel-based permits, because of the offshore nature of this fishery, and the likelihood that large vessels will be participating, the Department has proposed a vessel-based permit system. It is more effective to craft regulations focused on the vessel's activity, rather than an individual's, for a fishery of this nature. Additionally, many comparable fisheries (i.e. those that work offshore or require large vessels) are regulated with vessel-based permit programs, including federal groundfish, drift gillnet, pink shrimp, salmon, Dungeness crab, coastal pelagic species, squid and spot prawn trapping. Furthermore, given the likelihood that these vessels will employ multiple crewmembers that rotate on and off the vessel, it is more efficient to permit the vessel itself, rather than individuals.

Subsection (a)(1) - Tanner Crab Trap Vessel Permit Issuance Provisions. Unlike many other commercial fishery permit programs in California, the sale of permits will not be limited by the Department in the proposed permit program. The permits are not subject to renewal requirements, and there are no deadlines or late fees for purchase of a Tanner Crab Trap Vessel Permit. There is not a moratorium on the issuance of permits, and purchase is available to anyone at any time during any season who wishes to begin fishing. The permit allows only the opportunity to fish for Tanner crab in the current fishing season from April through the following March, and holding a permit in a prior season has no bearing upon the opportunity to fish in the fishery or to purchase a permit at a later date.

In order to purchase a Tanner Crab Trap Vessel Permit for placement on a vessel, the vessel must only have a valid commercial boat registration pursuant to Fish and Game Code Section 7881, and the applicant must hold a valid commercial fishing license.

Subsection (a)(2) - Tanner Crab Trap Vessel Permit Fee. The Department's proposed permit fee for a Tanner Crab Trap Vessel Permit is $10,000, and the permit is valid for the current fishing season only. Pursuant to subsection (f) of Section 7090 of the Fish and Game Code, which authorizes the Commission to charge a permit fee that covers costs of emerging fishery program implementation, the Department has designed the proposed permit program and fees with operating costs to the Department in mind.

The following items were considered in determining the proposed permit fee:

1. The revenues generated from tax on Tanner crab landings will amount to only $3800 per season if the entire proposed seasonal harvest limit is landed, which will not come close to covering projected costs of management.

2. The Department anticipates that there may be only between five and nine vessels interested in participating in the fishery.

3. Biological funding needs – Permit revenue is needed to fund oversight of the fishery observer program, enforcement, review of biological and fishery data, oversight of ongoing fishery monitoring programs such as logbooks and observers, dockside sampling, site visits, and other biological review and data analysis that will be required on an as-needed basis. These analyses will ensure that management measures are appropriate to allow for continued resource utilization without undue harm to the ecosystem. See Table 2 for detailed cost estimates.

In the event that the number of permittees in the fishery exceeds projections, costs for biological monitoring, enforcement and data analysis programs will increase beyond these estimates accordingly. The Department would also need to track the catches real-time against the total allowable limit so that a closure of the fishery could be announced in a timely manner so the catch limit is not exceeded. With relatively few participants there will not be a need to track catches on a real-time basis. Fisheries such as herring in San Francisco and crab in Alaska which require precise tallying of landings as they are made entail substantially greater personnel costs.

4. Management/regulatory funding needs - The Department will have ongoing costs associated with regulatory production and review, dissemination of regulations and/or notifications, permit processing and issuance, public information, enforcement of permit requirements, and program administration. See Table 2 for detailed cost estimates. As with biological funding needs, Department costs for management and regulatory functions would increase as the number of participants increase.

5. Costs have already incurred by Department biological, enforcement and licensing staff for evaluation of the experimental fishery and development of the proposed program, including costs for policy and regulatory development.

Subsections (a), (a)(1) and (a)(2) - Additional Rationale for the Proposed Permit Program and Fee. The Department's recommended approach to permit sales and fees lets market conditions, profit margin, and competition between fishermen influence how many vessels will participate in the fishery to take the allowable harvest. Because the fee is substantial relative to other permit fees, only those who are serious about participating in the fishery now, rather than the future, will buy a permit, as permit sales are not limited. The Department anticipates that this strategy will discourage excess capacity from the onset of the program, if excess capacity is measured in terms of the number of latent fishing permits.

The Department and Commission often use a moratorium to prohibit new vessels or individuals from entering a fishery. A deadline is set, and new permits are not sold after that date. Oftentimes, given that deadline, a "gold rush" mentality ensues, and individuals that fear being precluded from the fishery often buy a permit before the deadline simply to preserve their opportunity to fish at a later date. Conversely, the proposed Tanner Crab Trap Vessel Permit program allows the number of participants, the permit cost and the harvest limit to be the determining factors in terms of the number of permits issued. People are unlikely to buy permits without intending to fish them, given their cost. Additionally, there is no incentive to rush to buy a permit now, as with a moratorium program, as the same opportunity to buy a permit that exists at the onset of the program will

continue to exist in the future. The Department expects that only those serious about pursuing the fishery during the current fishing season will purchase the permit, as permits from prior years will not entitle a permittee to a future harvest opportunity beyond the current season.

Over the past several years, the Commission has also adopted many new regulatory programs that seek to reduce excess fishing capacity by eliminating latent participants or vessels and limiting future fishing opportunities to only those individuals or vessels that have been most reliant on that particular fishery resource based on their prior catch histories. These restricted access programs are extremely costly and time consuming to develop and institute, and often fall short of achieving the desired results. For Tanner crab permits, the proposed strategy of combining unrestricted permit issuance with no expectation of future moratoria or limited entry and the proposed fee, was designed with the expectation that excess capacity will not become a concern for this fishery under the proposed management strategy.

For example, with a proposed seasonal harvest limit of two million pounds, if vessels roughly repeated the performance of the 2004 experimental fishery, the allowable harvest could be taken by about 4 vessels, and each would earn about $600,000 in gross revenue depending on the price paid per pound for the crab. Given the proposed $10,000 permit fee, the allowable harvest will be split only as many ways as is cost-effective. If eight vessels participate, they may reasonably expect to gross approximately $300,000 if they all actively fish. The number of permits sold is likely to be tied to the calculation of the profit margin.

Furthermore, the proposed Tanner Crab Trap Vessel Permit program is substantially simpler from a regulatory perspective compared with moratoria or restricted access permit programs, as there is little or no need to address issues such as permit transfer provisions, death provisions, appeals of issuance criteria, and other issues relative to an aging fleet. Unlike many other programs, if an applicant wants to enter the Tanner crab trap fishery at any time and purchase a permit from the Department to begin fishing, the regulations allow it.

Subsection (a)(3) – Other Permits Required. Pursuant to Fish and Game Code Section 7850, all persons aboard a vessel that is fishing under authority of a Tanner Crab Trap Vessel Permit must possess a valid commercial fishing license, unless they are exempted. Similar to other trap fisheries, and consistent with statutory requirements for trap fishing, the proposed regulations would also require that each commercial fisherman also hold a General Trap Permit issued pursuant to Fish and Game Code Section 9001.

Subsection (a)(4) - Tanner Crab Trap Construction Requirements, Specifications, and Limits. The proposed regulations in this subsection will

require that traps used to take Tanner crabs adhere to detailed construction and use requirements. Since the proposed regulations are authorizing a new trap fishery, the Department believes that regulating trap use and construction is a key component of this emerging fishery. In general, the provisions are consistent with, if not more restrictive than, other commercial trap permit provisions as described below.

Subsection (a)(4)(A) - State Trapping Requirements. As a condition of the Tanner Crab Trap Vessel Permit, Tanner crab traps and fishing activities will be subject to the statutes and regulations that apply generally to all commercial trap fishing activity. These include trap logbook and submission requirements, trap destruction devices, preventing the disturbing of traps of other individuals, trap servicing intervals not to exceed 96 hours, trap marker buoys and other trap and buoy identification requirements. These statutes and regulations are defined in Fish and Game Code sections 9001 and 9002-9008, and sections 180, 180.2, 180.5, and 190, Title 14, CCR.

Subsection (a)(4)(B) - Trap Construction and Dimension Requirements. The proposed regulations specify that each Tanner crab trap must be constructed with at least three escape ports. This requirement is necessary to allow for undersized crab to escape from the trap while it is fishing. The escape openings must be at least 4.5 inches in diameter, and located in the side or upper panels of the trap. The regulations provide for alternative ways to construct these escape openings, and describe the manner by which the 4.5-inch opening shall be measured.

The proposed regulations of this subsection also specify Tanner crab trap size requirements. Tanner crab traps cannot exceed 10 feet long by 10 feet wide by 42 inches high, measured at the greatest distance in each dimension. These dimensions are consistent with regulations for Alaska's *bairdi* and *opilio* Tanner crab fisheries, which would allow those fishermen to fish in California without having to acquire new gear.

Subsection (a)(4)(C) and Amendment of Section 180.2, Requiring Trap Destruction Devices for All Tanner Crab Traps. Fish and Game Code Section 9003 specifies that every trap used to take finfish, mollusks or crustaceans must contain at least one destruction device that complies with specifications defined by the Commission. Under the existing regulations of Section 180.2, Title 14, CCR, the Commission requires that all commercial traps must have a five-inch opening that will allow for escapement of fish or invertebrates in the event that the trap is lost and cannot be retrieved. The escape opening is designed so that when a particular "destruct device material" corrodes in seawater or otherwise separates after an amount of time, the fish or invertebrates may escape from the trap. The material may be untreated cotton twine or corrosive metal rings or

crimps that meet certain specifications. Fishermen routinely replace the destruct device material in the trap when servicing their traps in the course of fishing.

Because Tanner crabs are larger than other crabs for which the Commission has previously prescribed trap destruct devices, the required five-inch opening is not of adequate size to allow for escape of Tanner crab when the destruct device material gives way. As a result, the proposed regulations would specify Tanner crab trap destruct requirements that differ from California's other trap fisheries in terms of the required size of the opening.

To determine an adequate size opening, the Department evaluated Alaska's trap destruction device regulations that apply to their *opilio* and *bairdi* Tanner crab fisheries. Alaska requires an 18-inch escape opening, which usually is constructed by simply making a slit in a mesh trap. However, placing this provision in California's regulations would essentially require that fishermen use a mesh trap. The proposed California regulations do not specify any requirement that Tanner crab traps be constructed of any particular material, as this was not a focus of study for the experimental fishery.

As a result, the proposed regulations would require that the Tanner crab trap destruction device escape opening shall measure not less than 11 inches taken "at its smallest inside diameter." This would allow for an 11-inch door or other opening in a trap constructed of rigid material. Tanner crab would be able to pass through the opening whether it is constructed of mesh or a rigid material, and mesh traps with 18-inch slits would also comply with the requirement.

Additionally, existing California trap regulations require that the destruct device be located in the upper half or on the top wall of the trap. The reason for this requirement is so that the escape opening does not become buried in sand or mud as the trap remains in the water. However, given the depth of operation of the Tanner crab trap fishery, this is less of a concern than for shallower trap fisheries that are impacted by surge. Meanwhile, Alaska regulations require the opening be placed in a sidewall within six inches of the bottom of the trap, to aid in escapement of Tanner crab. Consequently, to deal with the inconsistency between the destruction device regulations of California and Alaska, the Department proposes to authorize escape openings for destruction devices of Tanner crab traps that are on either the top or any sidewall of the trap, but may not be in the bottom of the trap.

The proposed regulations provide that the corrosive destruction device materials authorized for use in Tanner crab traps would be the same as those already in effect for Dungeness and rock crab traps. Untreated cotton twine may be used, if limited to a single strand, size No. 120 or less. Other destruction device

materials that are currently authorized for all traps in California may alternatively be used.

Other non-substantive changes are proposed for the existing regulatory text of Section 180.2, Title 14, CCR, in order to improve clarity.

Subsection (a)(4)(D) - Prohibition on Pop-Ups. The proposed regulations will prohibit the use of timed buoy release mechanisms capable of submerging a buoy attached to a trap, commonly known as "pop-ups." Additionally, they may not be possessed by any commercial vessel while taking, attempting to take or possessing Tanner crabs. Pop-ups make a trap's marker buoy invisible from the surface of the water. While pop-ups are authorized in some of the state's commercial trap fisheries, notably lobster, Department enforcement staff have reasoned that because pop-ups result in the concealment of traps, trap provisions such as trap limits, construction requirements, servicing requirements and others essentially become unenforceable when pop-up use is authorized. Because the Department's Tanner crab trap fishery proposal includes these trapping requirements, prohibiting pop-up use in the future fishery is critical to ensuring their compliance.

Additionally, if pop-up use were authorized and marker buoys were not visible from the surface of the water, the Department anticipates there may be an increase in gear conflict with other users of offshore slope waters, as groundfish trawlers and Tanner crab trappers are likely to utilize many of the same deep water fishing areas.

Subsection (a)(4)(E) – 300-Fathom Minimum Depth Requirement for Trapping. The proposed regulations would require that Tanner crab traps only be placed or otherwise used in water depths greater than 300 fathoms. This measure will serve to minimize interaction (gear conflicts or turf wars) with other fisheries that target shelf resources, such as Dungeness crab, spot prawn or groundfish. Additionally, trawl survey information on Tanner crab abundance and distribution indicates that they are less available in shallower water. As a result, the depth requirement will also minimize bycatch of other species and maximize productivity for Tanner crab harvest.

Subsection (a)(4)(F) - Trap Buoy Marking Requirements for Vessels. Existing Fish and Game Code statutes require that every trap or string of traps must be marked with a buoy that is marked with the operator's commercial fishing identification number. Because the proposed Tanner crab trap permit will be a vessel-based permit, the proposed regulations will require additional Tanner crab trap marking requirements to ensure that all Tanner crab traps are attributable to a particular vessel, not just a particular operator. Therefore, the buoy must be marked with both the vessel's commercial fishing registration

number, as well as the operator's number. These regulations are necessary in order to enforce the limit on the number of traps that may be fished by each vessel. Otherwise, several different operators on a vessel could each deploy strings of traps.
The additional proposed trap buoy marking requirements are as follows:
1. Every string of traps must be marked with a buoy on both ends of each string, rather than just one end.
2. Each buoy marking a string of Tanner crab traps must also be marked with the vessel's commercial fishing registration number.
3. Persons aboard vessels fishing under authority of a Tanner Crab Trap Vessel Permit may only take, possess or land Tanner crab from traps marked with the vessel's own registration number.
4. The vessel's registration number on each buoy shall be preceded by the letters "TC."
5. The numbers and letters on the buoys must be legible, and adhere to color and size specifications that are defined in the proposed regulations.

Subsection (a)(4)(G) - Prohibition on Disturbing Another's Traps. Consistent with Section 9002 of the Fish and Game Code, the proposed regulations specify that, excepting Department employees, pulling or disturbing another person's Tanner crab traps is not allowed, unless that individual has written permission in his or her immediate possession from that permittee. Additionally, Department employees may provide a permittee's name, address and registration number to other agencies to facilitate the return of lost or disturbed Tanner crab traps.

Subsection (a)(4)(H) - Trap and String Limits. As previously described, Fish and Game Code Section 9000 prevents the expansion of trap fishing activity off California unless a fishery is expressly authorized. And even when authorized, additional statutes thoroughly regulate trap construction and use. Despite the fact that the experimental fishery operated between eight and 35 miles off the northern California coast, in water depths not heavily utilized by other commercial trap fisheries, logbook information provided to the Department from groundfish trawlers operating in the Fort Bragg area reflected that there were occurrences of Tanner crab trap gear interaction with the groundfish trawl fishery. The Department believes that limiting the total amount of gear used per Tanner crab trap vessel is in the best interest of the offshore slope ecosystem, existing fisheries, and other vessel traffic that operates in those waters.

The Department's proposed regulations will limit each Tanner crab vessel to not more than six strings of traps, with not more than 80 traps per string; to cap the amount of gear used in this fishery. These proposed limits were determined from an evaluation of trap logbook data, and pursuant to Fish and Game Code Section 9004, which requires that each trap be pulled every 96 hours (four days). The Department has established that this limit will allow for fishermen to fish

essentially at the same level of effort as the experimental fishery, yet will only authorize as much gear to be used as can be maintained within the confines of the 96-hour soak time provision.

According to trap logbook data provided by the experimental fishery participants, in the two years that the fishery was active, the average number of traps pulled on each day that fishing occurred was 164 in 2003, and 188 in 2004. During the fishing season (defined for this purpose as the time period between the first and last day of fishing for the year as recorded in log records), the number of days fished was 77 percent of days in 2003, and only 47 percent of days in 2004. Given the 96-hour soak time requirement, a vessel pulling 176 traps per day (the 2-year average) and fishing on 62 percent of days in the season (the two year average) would need to fish 436 traps to repeat the performance of the experimental fishery.

On average, the experimental fishery reported pulling two or three strings of traps per day of fishing. The number of traps per string averaged 69; with no records showing more than 90 traps per string.

Observer data from the experimental fishery reflects that the trap soak time for the experimental fishery was largely out of compliance with the 96-hour soak time statute. In 2003, only 43 percent of trap strings were reported as pulled within 96 hours of being set; while in 2004 only four percent of sets were in compliance.

Under terms of the 2003 experimental permit, the vessel was authorized by the Commission to use up to 600 traps. For 2004, the permittee requested an increase in the number of traps to 1,000. Based on the logbook and observer information described above, the Department cannot support authorizing trap limits at either of these levels given the 96-hour statutory requirement. Recognizing the estimate that a vessel fishing at the average performance levels of the experimental fishery could utilize 436 traps by pulling each once within the 96-hour limit, coupled with the observed numbers of traps per string and strings pulled per day, the Department's recommendation of not more than 480 traps and not more than six strings with not more than 80 traps per string should allow for fishing activity that is consistent with prior practices, yet is in compliance with statutory requirements.

Further examination of the observer and logbook data suggests that there is no correlation between increased trap soak time and increased catch of legal crab. Therefore, requiring the Tanner crab fishery to adhere to the statutory soak time requirements on trap servicing, and fish less gear than the experimental fishery, is not projected to result in any reduced catch efficiency.

Trap limits have also proven beneficial in terms of reducing gear losses. In Bering Sea *opilio* fisheries, a result of limiting the number of traps per vessel has been the reduction of traps lost from an estimated 10 to 20 percent each year, down to 1 or 2 percent.

It is notable that the Department's proposal to limit the number of traps to a maximum of 480 traps per vessel is less restrictive than regulations for many Tanner crab fisheries elsewhere. In fact, for jurisdictions that limit the number of traps used, 300 traps per vessel is the maximum number that is authorized. For all Alaska *tanneri* fisheries, the limit is 100 traps per vessel (see Table 1).

Subsection (a)(5) – Processing at Sea. The Department proposes to allow vessels to process crabs at sea and land them in a condition other than whole, similar to other fisheries including salmon, swordfish, sablefish and some sharks. The regulations of this subsection would serve to impose additional reporting requirements on fishermen who process at sea, so that pounds landed in a processed condition can clearly be distinguished from crab landed whole on a fish receipt.

While the crab taken in the experimental fishery were all offloaded live, participating fishermen and others seeking information about the fishery expressed interest in being able to process the catch at sea and land it as frozen crab clusters. In consideration of these requests, the Department has included regulations in the proposal that would allow for this activity.

The proposed regulations would specify that if Tanner crab is not landed in the round, the whole-weight conversion factor that shall be applied is 1.61, based on the conversion rate calculated from the experimental fishery that was determined from the weight of whole crabs compared with the weight of the processed crab clusters from the same crabs. At the time the landing receipt is completed, the processed weight shall be recorded in the "Pounds" space on the receipt, which is consistent with the required procedure to record the weight of the fish in that space that is actually sold. However, the regulations would further specify that the converted whole weight, in pounds, must be recorded in the space marked "Note Pad" on the landing receipt.

Additionally, the proposed regulations clarify and inform fishermen that for purposes of landing tax payments as required by Fish and Game Code sections 8041 and 8051, for Tanner crab landed in processed condition, tax payments shall be computed and paid based on the converted whole weight.

To improve clarity and to avoid the need for future interpretation by enforcement, the proposed regulations also specify that for purposes of Tanner crab

processing, the term “processing” shall not be equated with the term or activity of “Process fish” as defined in Fish and Game Code Section 8031.

Subsection (a)(6) - Cumulative Vessel Trip Limits. The Department’s proposed permit program includes a limit on the amount of Tanner crab that may be taken or landed per vessel over a specified time period, which is anticipated to achieve multiple objectives in the fishery. The proposed limit per vessel per two-month limit period is 250,000 pounds of whole crab, with no limit on the number of landings or trips. This was the highest observed two-month catch total for the experimental fishery. The purposes for the requirement include, but are not limited to, the following:

1. Given the proposed two million pound harvest limit, a 250,000-pound limit per vessel ensures that the harvest will be spread between several vessels, even if the entire harvest is taken in a short time period.
2. Unless many more vessels than are anticipated fish heavily in the first two months, the limit will likely prevent the entire two million pounds from being taken quickly at the opening of the season, thereby providing a more steady supply to markets.
3. Combined with the proposed trap limit regulations, the cumulative trip limit is likely to reduce the incentive to land large volumes of crab in a short time frame.
4. The proposed cumulative vessel trip limit concept is utilized in other offshore fisheries, such as groundfish.
5. For purposes of tracking catches against the seasonal harvest limit, the cumulative vessel limit will help the Department more accurately project when the proposed two million pound seasonal catch limit may be reached.
6. Vessels will limit their investment in gear for this fishery (a measure of fishing capacity) to correspond to the allowable limit of their catch.

The proposed regulations in this subsection also specify that for purposes of calculating catch against a cumulative vessel trip limit, all landings of processed crab will be tallied according to their the whole-weight equivalent as described by the process defined in subsection (a)(5)(B). For purposes of enforcing the vessel trip limits, copies of all landing receipts which document the catch of Tanner crab must be kept on board the vessel throughout, and for 15 days following, each two-month cumulative limit period.

Subsection (a)(7) - Incidental Landings and Allowances. When possible, the Department allows for retention of incidental take that occurs as a consequence of directed fisheries when biological information suggests it can be done in a sustainable manner. The proposed regulations would allow up to five percent by weight of the total catch that is possessed or landed to be invertebrates other than Tanner crab species. These other species of crabs and invertebrates may be landed and sold incidentally so long as other statutes and regulations allow it,

except for crabs of the genus *Cancer* (i.e. Dungeness crab and rock crab), which may not be retained or landed. The reason that these species of crab are prohibited is because the Department already has directed fisheries for these species, and statutes and regulations allow commercial harvest only by permitted vessels or individuals.

Observer data from the experimental fishery indicate very minimal take of any species other than *tanneri* in the traps. There was a small amount of incidental take of a king crab relative, *Lithodes couesi* (less than three percent of the *tanneri* take) and of *angulatus* (less than one percent of the *tanneri* take). *L. couesi* is a desirable and marketable species, and the participants in the experimental fishery had expressly requested that incidental take of this species be authorized as a condition of the permit. The Department knows little about the stock status of *couesi* and *angulatus* off California, but believes the five percent incidental take limit should minimize impact to the *couesi* stocks, while incidental take of *angulatus* would be counted against the overall Tanner crab seasonal catch limit and cumulative vessel trip limit.

The proposed regulations of this subsection will also require the release of all finfish taken in Tanner crab traps, with the exception of sablefish, which may be landed if authorized pursuant to Federal groundfish regulations at the time and location of fishing activity. In 2003, 309 pounds of sablefish were landed, as authorized by terms of the experimental permit. No landings of sablefish were made in 2004, though a small amount was noted by the onboard observer, along with occasional rockfish.

Additionally, the Department's proposal calls for a prohibition on the use of any invertebrate or finfish taken in Tanner crab traps as bait. Authorizing the use of any marine resource as bait without first requiring it to be landed is problematic as it results in inaccurate estimates of total catch of that resource. Proposed regulations in this subsection would prevent the activity.

Subsection (a)(8) - Observer Requirements and Cooperation with Observer Programs.

In the Marine Life Management Act (Fish and Game Code 7050 et seq.), the Legislature mandated a proactive approach to management of emerging fisheries. They did not want new fisheries growing more quickly than the knowledge and understanding necessary for managing them. In addition to data from the experimental fishery available from logbooks and landing receipts, the Department has a total of 14 weeks of observer data from the two seasons that the experimental fishery operated. The data collected by observers at sea were vital to the development of the proposed regulations for the new trap fishery.

For the purpose of future management of the fishery, it is critical to continue at-sea observations to monitor what is actually taken in traps other than the male Tanner crabs that are retained. Bycatch of other finfish and invertebrate species, and the numbers of undersized male and female Tanner crab that are discarded, are important to understanding the fishery's effect on the targeted species and the ecosystem. Vessels and operators differ in their fishing techniques and abilities, and it is likely that the new fishery will expand to other waters of the state beyond northern California. It is important to continue to make at-sea observations on multiple vessels and throughout the geographic range that the fishery operates.

The Department's proposal to allow for a new Tanner crab trap fishery is the first regulatory program authorized under the emerging fishery statute (Fish and Game Code 7090). And because this is a new commercial fishery that has yet to demonstrate a history of sustainable catches, the Department believes that continuing to require on-board observation of the emerging fishery is critical to the evaluation and assessment of its successes and any shortcomings of the fishery from both a biological and a regulatory perspective.

The proposed regulations require that every permitted vessel must carry an onboard observer beginning the day that fishing commences and during all fishing operations that occur over the sixty days that follow. A vessel's fishing activity commences at the time that a trap is deployed.

The proposal would allow the permitholder the option of contracting with a private data collection company for the service of providing an observer, or recruiting and hiring a NMFS-certified or ADFG-certified crab observer who meets the Department's approval. The permittee must seek approval of the selected observer or private data collection firm from the Department at least 60 days prior to the planned beginning of fishing activity as specified in the regulations.

The states of Alaska, Washington and Oregon all have onboard observer programs for a variety of fisheries. Onboard observer programs greatly enhance management primarily by facilitating information gathering and by improving regulatory compliance. The programs in other states are primarily industry supported, although federal and state funding has sometimes been used to initiate or enhance the programs. Funding methods vary, but they usually fall into two categories, tax (direct or indirect) and pay-as-you-go. In the first category, the fishermen's landings are taxed and the revenues are used to pay for observer coverage; or taxed indirectly when a portion of the resource is harvested by the government, sold, and the profits used to pay for the observer program. In the other category, pay-as-you-go, vessels contract and pay for observer coverage using a private data firm certified by the state. Observer costs range from $300-$350 per day. The Department has contacted two private

data collection firms, and with adequate notification (sixty days) they can provide qualified observers to sample vessels in California.

California does not have an observer program for its other state-managed commercial fisheries, and it is not economically feasible for the state to contract with a private data firm for observation of the new Tanner crab trap fishery. Consequently, the Department has crafted the proposed regulations to allow permitholders the flexibility to contract for an observer with a data firm or independently if they choose. The Department will maintain responsibility for the onboard sampling protocol.

Without onboard observers, the Department will have little information about bycatch and discard, and less complete information on catch and effort rates. However, one hundred percent observer coverage is not necessary as long as the sampling done is representative of what is occurring in the fishery.

The Department believes that sixty days of observer coverage per vessel will provide sufficient data for analysis. The total percentage of coverage that is likely to result each year is influenced by several factors – the number of vessels that actively fish, the catch rate, and how quickly, if at all, the seasonal harvest limit is attained. For example, if there are ten vessels that fish actively in the first two months of operation and the fishery's seasonal catch limit is reached prompting closure; observer coverage would have been 100 percent. Conversely, if there are only two vessels in the fishery, and they fish many months through the year, observer coverage for only the first 60 days would result in substantially less overall coverage of the fishery; possibly as low as 20 percent.

However, due to soft-shell molting periods of Tanner crab where the market quality is undesirable, and the general need for vessels to diversify and participate in many fisheries in a single year, it is unlikely that the fishery would operate for a 12-month period of time under any circumstances. Given the Department's estimate of five to nine vessels in the fishery, the Department believes that the proposed observer requirements will result in capturing data from at least 50 percent of the allowable harvest.

The proposed regulations would require the permittee to ensure that the observer collects biological and fishery data according to the department's onboard data collection protocol, and that while aboard, the observer is gathering data at all times when the vessel is engaged in fishing activity. Data collected by the observer will include, but is not limited to, information on catch, incidental take, sex ratio, size, weight, discards, vessel position and depth, trap soak time, number of traps set and pulled, observation reports and other documentation.

The Department's data collection protocol is comparable to federal fishery observer programs.

The proposed regulations would also specify that the data being collected be submitted to the Department in electronic format. Data analysis is very costly, particularly when all the data must be entered into a database after it is received. By providing all onboard observers with a laptop computer, the Department can devote its staff resources to analysis rather than data entry. The regulations also require that the data collected by onboard observers is the property of the Department, and must be submitted each month according to specifications described in the proposed regulations.

The proposed regulations would also require that Department personnel at any time be allowed aboard the permitted vessel to inspect or observe the equipment, fishing procedures, and catch (retained or discarded). Additionally, if requested, the permittee must cooperate with other state and federal fishery observers pursuant to the guidelines in Section 105.5, Title 14, CCR. These requirements are standard for most commercial fisheries in the state, and allow staff to see firsthand how the fishing operation is conducted and what is being taken.

Subsection (a)(9) - Permit Revocation and Violations. The proposed regulations include conditions under which the Commission may revoke a Tanner Crab Trap Vessel Permit. They include:

1. Pursuant to Fish and Game Code Section 1052(b), a Tanner Crab Trap Vessel Permit shall be revoked if any person submits false information for the purposes of obtaining a permit.
2. A violation of any provision of Section 126, Title 14, CCR, by a permit holder or those acting under authority of his or her permit.
3. A violation of Fish and Game Code sections 9000, 9002-9008, sections 105.5, 180, 180.2, 180.5 and 190, Title 14, CCR, or any other provision of the Fish and Game Code or regulations of the Fish and Game Commission relating to the commercial take or fishing of Tanner crab using trap gear.

The proposed regulations also specify that the Tanner crab trap permittee is liable for violations of any of these sections committed by him or her, as well as violations committed by any other person operating under the authority of his or her permit. Any other person violating these sections is liable for his or her own violations as well.

Subsection (b) - Seasonal Catch Limit. The proposed regulations specify that for the period from April 1 through March 31 of the following year, a total of not more than two million pounds of Tanner crab may be landed in California. Given the current estimated biomass of Tanner crab off California of approximately 40

million pounds, the Department recommends that the new trap fishery be limited to a modest commercial harvest of two million pounds.

As previously described in this text, sources of fishing mortality to Tanner crab will come not only from catch landed in the directed trap fishery, but also from the discard mortality of undersized and female crabs, as well as from the continuing impact of being taken as bycatch in groundfish trawl fisheries.

At this time, data from the experimental fishery does not allow for a precise estimate of discard mortality. However, based on the percentage of legal males retained from traps, when the discard mortality from Tanner crabs that are released is combined with the number of males that die prior to landing (deadloss), the total volume of discard mortality is less than the volume of catch that is landed.

In addition to tracking catches and discards from the new trap fishery, the Department will continue to monitor the bycatch levels of Tanner crab in the trawl fishery. At current bycatch levels, reduced substantially from the past, the Department believes that the resource can continue to sustain this impact as well as the impacts of proposed harvest by the new directed trap fishery. Although estimates of both discard and bycatch are imprecise, the Department estimates that at the proposed seasonal catch limit of two million pounds, mortality from all fishery sources will not exceed ten percent of the estimated biomass.

However, the Department intends to continue to evaluate the discard mortality and bycatch data and adjust management measures as needed to ensure that the total fishery impacts to the resource are sustainable, and that production of marketable crab is maximized while discard mortality and deadloss are minimized.

The proposed regulations of this subsection would also require that all landings of processed crab be converted to the whole-weight equivalent for catch tracking purposes, as described in subsection (a)(5)(B).

The proposed regulations would also provide for closure of the directed trap fishery once the Department estimates that the catch limit is reached or is projected to be reached prior to the end of the fishing year. The Department will send Tanner Crab Trap permitees a closure notification letter with no less than 10 days notice of the closure, and give the public and the Commission no less than 10 days notice of the closure via a department news release.

Subsection (c) - Minimum Size Limit. Size limits provide some protection against overharvest and provide for improved product quality. Following from Alaska's regulations for *tanneri*, size limits have been set at one average molt

increment above estimated average size at maturity because Tanner crab are known to produce multiple egg clutches from a single mating. The proposed regulations would require that any species of Tanner crab taken in any commercial fishery must have a minimum carapace width of 5 inches. This size limit will provide some assurance that crabs would have a chance to reproduce before being caught. Anyone commercially taking Tanner crabs shall carry a measuring device, and any Tanner crab found to be undersized shall be returned to the water immediately.

Subsection (d) - Male-Only Fishery. The proposed regulations would authorize the commercial harvest of male Tanner crabs only. Because female crabs store sperm for a period of time, and one male crab can fertilize many females, removing the males only while leaving the females to reproduce will minimize impact on overall egg production.

The proposed regulations would require that all female Tanner crabs must be returned to the water immediately. Markets are not likely to purchase smaller male or female crabs, so they would likely be discarded even if landing them were authorized. With adequate observer coverage and catch monitoring, the Department will continue to evaluate and assess mortality on undersized and female crabs.

Subsection (e) - Prohibition on Use as Bait. Tanner crabs may not be used as bait in any commercial fishery. Were Tanner crabs to be crushed for bait purposes, the size limit would not be enforceable. Furthermore, if Tanner crabs could be taken at sea and used as bait prior to being landed, commercial landings information would be lost and the overall estimate of catch would be less accurate.

Subsection (f) - Tidal Invertebrate Permits. Regulations were needed to clarify that Tidal Invertebrate Permits issued pursuant to Section 123, Title 14, CCR, are not required for the commercial take of Tanner crab. Because the regulations of that Section reference only the generic term “crab,” confusion may arise as to whether the permit is needed for Tanner crab.

(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 1050, 5508, 7090, 7708, 8026, 8500, and 9003 Fish and Game Code.

Reference: Sections 1050, 1052, 5508, 7050 et seq., 7850, 7881, 8026, 8031, 8040, 8041, 8042, 8043, 8046, 8051, 8500, 8834, 9000, 9001,

9002, 9003, 9004, 9005, 9006, 9007, 9008, and 9012, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change:

None

(d) Identification of Reports or Documents Supporting Regulation Change:

Tanner Crab Trap Experimental Fishery Report, Peter Kalvass and Jonathan Ramsay, Department of Fish and Game, October 2004.

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

February 4, 2005, Fish and Game Commission Meeting, San Diego, CA

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

No alternatives were identified.

(b) No Change Alternative:

The no-change alternative would mean that commercial harvest of Tanner crab using trap gear would continue to be prohibited. Coupled with the success of the experimental fishery, scientific information suggests that the resource is capable of sustaining some level of commercial harvest. Furthermore, statutory directives encourage development of emerging fisheries in these situations. The status quo alternative would mean the unfounded loss of economic opportunity to the state to develop a fishery that may prove viable for fishermen, fish processors, and fish buyers.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purposes for which the regulation is proposed or would be as effective and less burdensome to the affected private persons than the proposed regulation.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no significant adverse impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

The proposed 2005-06 regulations would benefit California's commercial fishermen and may benefit several North Coast crab processing plants, all of which are small businesses as defined under Government Code Section 11342.610. Under the proposed regulations, a directed Tanner crab fishery would be open to any California commercial fishermen on payment of the specified fees. Information from an experimental Tanner crab fishery in 2003 and in 2004 was collected to investigate this potentially new revenue producing resource in California. Between February and July 2004, landings in the experimental fishery were approximately 460,964 pounds of Tanner crab, with a reported ex-vessel value of $559,612. The Tanner crab (*Chionoecetes tanneri*) are often grouped along with *C. opilio* and *C. bairdi,* and marketed as snow crab, Tanner crab, queen crab, or spider crab. This market group has enjoyed very high market demand both domestically and globally. In year 2000, a drastic decline in the principal supply of domestic snow crab, from Alaska, resulted in imports accounting for more and more of the total U.S. supply of snow crab. (MBA 2004). By the end of year 2001, the U.S. landed approximately 26,843,453 pounds of snow and Tanner crab (12,176 metric tons), whereas imports totaled approximately 100,321,233 pounds (45,505 metric tons). Thus U.S. domestic production accounted for only about 21% of the U.S. market supply of snow crab; the remainder being imported from Canada (63%), Greenland (7%), and Russia (5%), with minor contributions from Japan and other nations. (NMFS 2004). Based on a proposed allowable harvest of two million pounds during a twelve month fishing season, projected ex-vessel revenues for this new California Tanner crab fishery could be as high as $2,460,000 (2,000,000 lbs x $1.23, average

price per pound for 1995 through 2004, equals $2,460,000). The California counties that would most likely benefit from this new revenue source are Humboldt and Del Norte counties, assuming that the crab are landed and processed in California. Based on local economic multipliers for these respective counties, projected annual ex-vessel revenues of $2,460,000 could mean increases of $2,918,298 to $3,680,652 in economic activity for Del Norte County and Humboldt County, respectively. (This is derived by multiplying the projected ex-vessel revenues $2,460,000 by the respective county economic output multipliers of 1.1863 for Del Norte County and 1.4962 for Humboldt County; e.g. Del Norte County multiplier of 1.1863 x $2,460,000 equals $2,918,298). (RIMS 2000).

MBA 2004. Monterey Bay Aquarium, Seafood Watch Seafood Report, Snow Crab – chionoecetes spp., Final Report, February, 2004. Available online at http://www.mbayaq.org/cr/cr_seafoodwatch/content/media/MBA_SeafoodWatch_SnowCrabReport.pdf

NMFS Statistics, 2002. Landings, import and export sources. Available online at www.st.nmfs.gov/webpls/. *As presented in Monterey Bay Aquarium, Seafood Watch Seafood Report, Snow Crab – chionoecetes spp., Final Report, February, 2004.

RIMS 2000. RIMS II Multipliers (based on year 2000 national annual input-output data and 2000 regional data), Bureau of Economic Analysis, US Department of Commerce. http://www.bea.doc.gov/bea/regional/rims/.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California:

With a proposed 2,000,000 pound annual harvest allowance, and favorable market demand for Tanner crab, this new fishery could represent 11.6 to 19.4 new full-time job equivalents based on employment multipliers for Del Norte and Humboldt counties, respectively. (RIMS 2000).

(c) Cost Impacts on a Representative Private Person or Business:

Commercial fishermen who elect to purchase a Tanner crab fishery permit would have to pay an annual fee of $10,000. In addition, they are required to privately arrange for on-board observers to monitor Tanner crab fishing activities, at the fishermen's expense. Costs for observers are expected to be significant, depending on the number of days spent Tanner crab fishing. Each participating vessel is expected to require, on average, about 35 days of Tanner crab onboard observer coverage each season (beginning with the first day of fishing and for all fishing activities during the immediately following 60 days). Since daily observer costs run $300 to $350 per day per observer, total observer costs are projected to be about $10,500 to $12,250 per vessel each season. Permittees may also have to purchase new Tanner crab traps or adapt existing traps to the proposed specifications. Information from commercial crab trap

manufacturers indicates that new traps will cost about $750 to $850 each. Under the proposed regulations, each permitted vessel may fish a maximum of 480 traps. Thus a maximum compliment of new traps could cost the Tanner crab fishermen $360,000 to $408,000 initially.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

None.

(e) Nondiscretionary Costs/Savings to Local Agencies:

None.

(f) Programs Mandated on Local Agencies or School Districts:

None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4:

None.

(h) Effect on Housing Costs:

None.

Informative Digest/Policy Statement Overview

Fish and Game Code Section 9000 prohibits commercial harvest of any finfish, mollusk or crustacean using trap gear unless expressly authorized by statute. Other statutes in Article 1 of Chapter 4 of the Fish and Game Code specify trap gear requirements for each directed commercial fishery in the state. Section 9011, which defines crab trap requirements, only provides specifications for traps that are used for purposes of taking Dungeness and rock crabs. Trap gear for other types of crabs is not provided for.

The proposed regulations would provide for the development of a small to moderate-scale commercial Tanner crab trap fishery in deep water off the coast of California that would be adopted under the authority granted to the Commission to manage and regulate emerging fisheries in Section 7090 of the Fish and Game Code.

Based on the success of the experimental Tanner crab (*Chionoecetes tanneri*) trap fishery in 2003 and 2004, the Department has determined that the Tanner crab fishery resource off California satisfies the statutory requirements of an emerging fishery. The Commission granted the experimental gear permits to explore the feasibility of commercial harvest under authority of Fish and Game Code Section 8606, which provides that "the Commission shall encourage the development of new types of commercial fishing gear and new methods of using existing commercial fishing gear." The experimental fishery landed 212,000 pounds of live Tanner crab in 2003 and 461,000 pounds in 2004 around Cape Mendocino. The fishery operated primarily along the 500-fathom depth contour, and between 8 and 35 miles from shore.

The target of major Alaska fisheries, Tanner crabs include several species of crab of the genus *Chionoecetes*, including the species commonly known as "snow crab," and are highly valued for human consumption. The proposal considers impacts to the Tanner crab resource, as well as the offshore environment and its other users.

The proposed regulations would implement the following program components:

1. **Tanner Crab Trap Vessel Permit Requirement.** The proposed regulations would establish a new commercial fishing permit that would allow for the directed commercial harvest of Tanner crab using trap gear. To purchase a permit for placement on a vessel, the applicant must have a commercial boat registration, hold a valid commercial fishing license, and submit an application and the permit fee. When the vessel is operating under authority of the permit, any person who operates or assists on the vessel must hold a commercial fishing license and a General Trap Permit.

2. **Permit Fee.** The proposed permit fee for a Tanner Crab Trap Vessel Permit is $10,000. The revenue generated from the fee will be used to offset costs already incurred by Department biological, enforcement and licensing staff for development of the proposed program. In the future, permit revenue will partially fund oversight of the fishery observer program, enforcement, review of biological and fishery data, oversight of ongoing fishery monitoring programs such as logbooks and observers, dockside sampling, site visits, and other biological review and data analysis that will be required on an as-needed basis.

3. **Prohibit Incidental Take in Existing Trap Fisheries.** Existing trap fisheries that incidentally take Tanner crabs must immediately release Tanner crab under the proposed regulations unless the vessel holds a Tanner Crab Trap Vessel Permit.

4. **Seasonal Catch Limit of Two Million Pounds.** The proposed regulations would limit the commercial harvest to two million pounds of Tanner crab into California ports each season (April through March of the following year). The proposed limit is based on the current 40 million-pound biomass estimate for Tanner crab off California, and from considering impacts of Tanner crab taken as bycatch in groundfish trawl fisheries, discard mortality of crab taken in the new directed fishery, and the potential for conflict with other fisheries operating in the same waters. The Department will track catches against the harvest limit and shall give not less than 10 days notice of the fishery closure to permittees via a notification letter, and to the public and the Commission via a news release.

5. **Proposed Trap Construction Requirements, Specifications, and Limits.** The proposed regulations specify the following:

   (A) General State Trapping Requirements. Tanner crab traps and fishing activities would be subject to statutes and regulations that apply generally to all commercial trap fishing activity. These include trap logbook and submission requirements, preventing the disturbing of traps of other individuals, trap servicing intervals not to exceed 96 hours, and trap marker buoy and identification requirements.

   (B) Trap Construction and Dimensional Requirements. Every Tanner crab trap shall have three escape ports of at least 4.5 inches minimum inside diameter, installed as described in the proposed regulations. Tanner crab traps must not be more than 10 feet long and not more than 10 feet wide and not more than 42 inches high.

   (C) Destruction Devices. Tanner crab traps must have an opening in any sidewall or on the top of the trap of at least 11 inches taken at its

smallest inside diameter. The escape opening must be closed with an authorized destruct device attachment material.

(D) Prohibition on Pop-Ups. Timed buoy release mechanisms capable of submerging a buoy attached to a trap, commonly known as "pop-ups," shall not be used on buoy lines attached to Tanner crab traps, and shall not be possessed by any commercial vessel while taking, attempting to take, or possessing Tanner crabs.

(E) 300-Fathom Minimum Depth Requirement for Trapping. Tanner crab traps may only be used in water depths greater than 300 fathoms.

(F) Vessel Buoy Marking Requirement. In addition to other marking and buoy requirements, every string of Tanner crab traps shall be marked with a buoy on each end of the string that is marked with the vessel's commercial boat registration number, and preceded by the letters "TC," as specified in the proposed regulations.

(G) Disturbing Traps Prohibited. Operators or crew aboard permitted vessels may not disturb, move or damage any Tanner crab trap that belongs to another owner, unless the individual has written permission in his or her immediate possession from the permittee whose vessel registration number is marked on the buoy.

(H) Trap and String Limits. No more than 480 traps may be used per permitted vessel, and not more than six strings with not more than 80 traps per string shall be used. All traps must be fished on a string of traps.

6. **Processing at Sea.** Based on interest expressed by prospective Tanner crab fishery participants, the proposed regulations would allow vessels to process crabs at sea and land them in a condition other than whole, similar to other fisheries including salmon, swordfish, sablefish and some sharks. The proposed regulations would impose additional reporting requirements on fishermen who process at sea, so that landings of processed crab can clearly be distinguished. Processed crab shall be converted to the whole-weight equivalent for quota and trip limit tracking purposes, and for fish landing tax purposes.

7. **Cumulative Vessel Trip Limits.** The proposed regulations would limit the amount of Tanner crab that may be taken or landed per vessel to 250,000 pounds per two-month period. All landings made by the vessel count toward the cumulative trip limit for the two-month period that corresponds to the date on the receipt. Copies of all landing receipts which document the catch of Tanner crab shall be kept onboard the fishing vessel throughout, and for 15 days following, each of the two-month periods.

8. **Incidental Landings and Allowances.** The proposed regulations would allow incidental take of up to five percent by weight for invertebrates other than Tanner crab, except for crabs of the genus *Cancer*, which may not be retained or landed. All finfish taken in Tanner crab traps must be released, with the exception of sablefish, which may be retained if authorized by federal groundfish regulations. No invertebrates or finfish taken in Tanner crab traps may be used as bait.

9. **Observer Requirements and Cooperation with Observer Programs**. Because this is a new commercial fishery that has yet to demonstrate a history of sustainable catches, on-board observation of the new fishery is needed to evaluate the fishery and its impacts. The proposed regulations would require that every permitted vessel carry an onboard observer beginning the day that fishing commences and during all fishing operations that occur over the sixty consecutive days that follow. The cost for the observer would be paid directly by the permittee. The regulations would allow the permitholder the option of contracting with a private data collection company for the service of providing an observer, or recruiting and hiring an observer certified by the National Marine Fisheries Service or by the Alaska Department of Fish and Game who meets the Department's approval. The permittee must seek approval of the selected observer or private data collection firm from the Department at least 60 days prior to the planned beginning of fishing activity as specified in the proposed regulations. The permittee would be responsible for ensuring that the observer follows the data collection protocol and that the data is delivered to the Department at the times and in the manner specified in the proposed regulations. The permittee would also be required to cooperate with any Department observer or other observer program, and as specified in existing regulations of Section 105.5, Title 14, CCR.

10. **Minimum Size Limit.** The proposed regulations specify that any species of Tanner crab taken commercially must have a minimum carapace width of 5 inches. Every person taking Tanner crabs shall carry a measuring device and any Tanner crab that is found to be undersized shall immediately be returned to the water.

11. **Male-Only Fishery.** The proposed regulations would allow only male Tanner crabs to be retained and landed. All female Tanner crabs must immediately be returned to the water.

12. **Prohibition on Use as Bait.** The proposed regulations specify that Tanner crabs may not be used as bait in any commercial fishery.

13. **Tidal Invertebrate Permits**. The proposed regulations specify that Tidal Invertebrate Permits issued pursuant to Section 123, Title 14, CCR, are not required for the commercial take of Tanner crab.
14. **Permit Revocation and Violations.** The proposed regulations specify that a Tanner Crab Trap Vessel Permit shall be revoked if the applicant or permittee submits false information for the purposes of obtaining a permit. Any Tanner Crab Trap Vessel Permit may be suspended, revoked or cancelled by the Commission for violations. The Tanner Crab Trap Vessel Permit holder shall be liable for any violations of the proposed regulations committed by him or her, as well as violations committed by any other person operating under the authority of his or her permit. Any other person violating the proposed regulations would be liable for his or her own violations as well.